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Effect of lobster traps on seagrass beds of the Florida Keys National Marine Sanctuary (FKNMS): damage assessment and evaluation of recovery

In the Florida Keys, spiny lobster traps are often deployed in seagrass beds. Given that several hundred thousand traps may be deployed in one season, the possibility exists for significant impacts to seagrass resources. The question is whether standard fishing practices observed in the fishery actually result in injuries to seagrass. This study was designed to measure the degree of trap injury on seagrass beds as a function of the duration of trap deployment (soak time) and habitat type (seagrass species) and the recovery thereof. Thirty treatment plots were randomly assigned within each of two monospecific seagrass beds (*Thalassia testudinum* and *Syringodium filiforme*) near Marathon, Florida. Five plots remained trap-free (controls) while the remaining plots each received a single trap. Five replicate traps were randomly removed at each of five soak times (one, two, four, and six weeks, and six months). Immediately following trap removal, seagrass short shoot densities were recorded and compared among control and treatment plots. Both seagrass species exhibited significantly decreased densities after six-week and six-month soak times. *T. testudinum* densities within the six-week treatments had returned to control densities four months after trap removal while *S. filiforme* densities remained significantly decreased. We conclude that traps must be recovered within a six-week period, beyond which, injury to seagrass beds is predicted. Within the limits of these testing parameters, it appears that standard fishing practices (typically < 5-week soak time) should not result in a significant injury to seagrass beds in the Florida Keys.